

Attachment 10. Costs and Benefits Summary
Rancho Palos Verdes
San Ramon Canyon Stormwater Flood Reduction Project

Table 20: Proposal Project Costs and Benefits Summary for Proposition 1E.

When computed, the overall benefit/cost ratio for the San Ramon Canyon Stormwater Flood Reduction Project is determined to be 1.36.

The City, and the consultant team formed to develop this grant application, believes this value is conservative and underestimates the overall benefit of the program. Key areas where the City and consultants believe the BCA ratio is underestimated is in the area of flood damage should the garden wall fail and allow debris laden runoff to course through the mobile home park during an event between the 25-year and 50-year flood. While HAZUS-MH is an incredibly powerful tool, it was not designed to allow users to easily shift the course of river reaches to account for sudden and dramatic changes in channels. Additionally, the flood model is designed to handle clear water flooding and not heavy debris flows or dam failures. Both of those factors could greatly increase the damage to the mobile homes below. The general building stock in HAZUS notes that there is over \$220 million worth of buildings below San Ramon Canyon and the current analysis is projecting damage to less than .2% to slightly more than 1.8% of the total valuation (for the 10-year and 500-year flood respectively). This is even with the proposed debris multiplier established by the City's flood expert.

The City of RPV will see substantial savings from the projects avoided with the implementation of the proposed project, along with other benefits from fines and road stabilization projects avoided. None of this analysis accounts for the qualitative benefits achieved in the by the implementation of the project. Table 20 is provided below.

Rancho Palos Verdes: San Ramon Canyon Stormwater Flood Reduction Project

Table 20 - Proposal Project Costs and Benefits Summary for Proposition 1E							
Proposal: <u>San Ramon Canyon Stormwater Flood Reduction Project</u>							
Agency: <u>City of Rancho Palos Verdes</u>							
Project	Agency	Total Present Value Project Costs (1)	Total Present Value Project Benefits				B/C Ratio
			Water Supply (2)	Flood Damage Reduction (3)	Other (4)	Total	
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
						(d) + (e) + (f)	(g) / (c)
San Ramon Canyon Stormwater Flood Reduction Project	City of Rancho Palos Verdes	\$18,949,752	\$12,008,642	\$1,817,270	\$11,939,630	\$25,765,542	1.36
TOTAL		\$18,949,752	\$12,008,642	\$1,817,270	\$11,939,630	\$25,765,542	1.36

(1) From Exhibit C, Table 10, column (i). Or from Exhibit D, Table 14, column (i). If project is a multi-purpose project, avoid double-counting costs.

(2) From Exhibit D, Table 18, column (d)

(3) From Exhibit C, Table 12, row (e)

(4) From Exhibit E, Table 19, column (j)